

## Figure 1: System Model

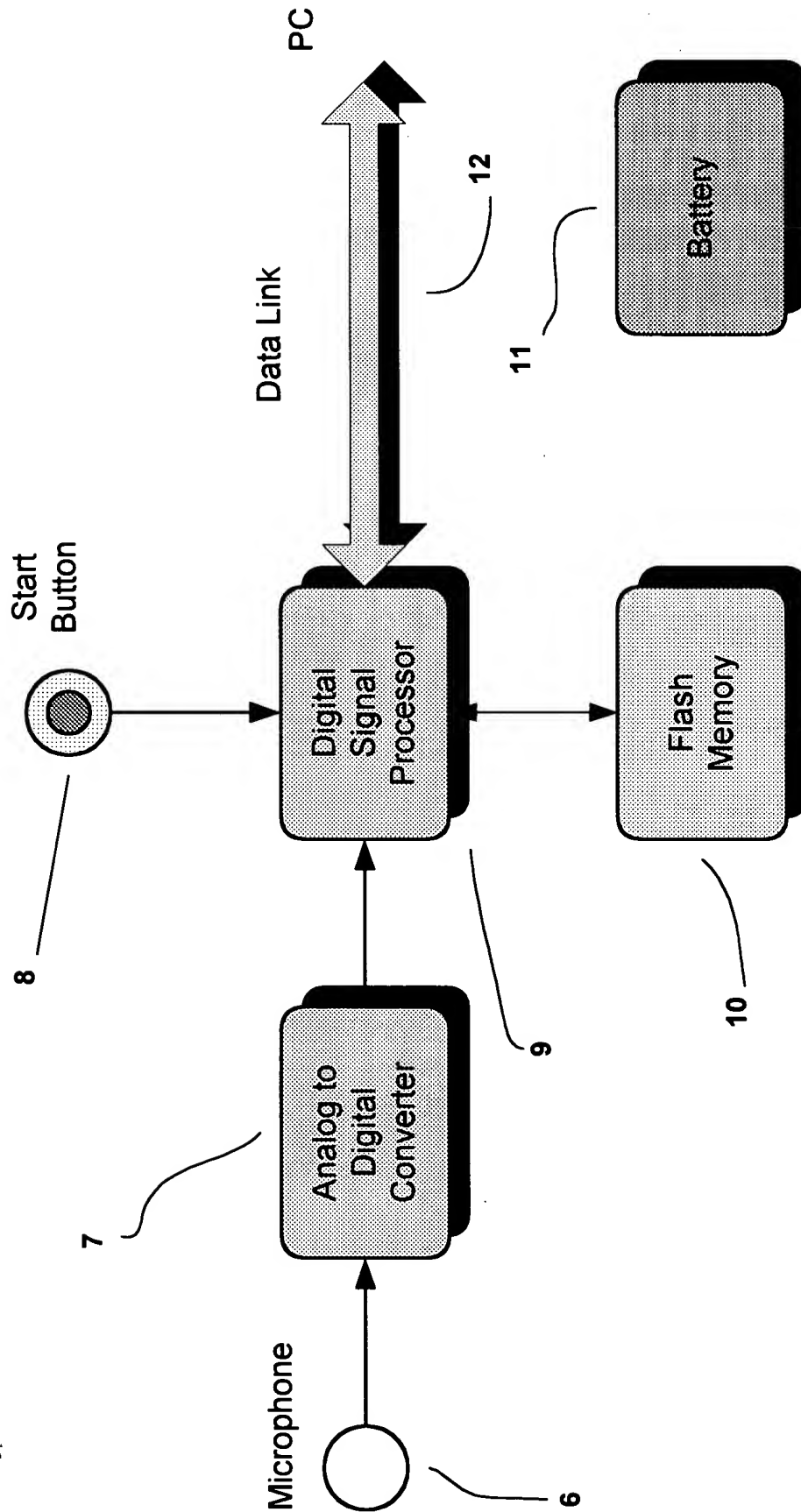


Figure 2: Typical Audio Capture Device

FIG. 3 is a block diagram of a Signal Recognition System.

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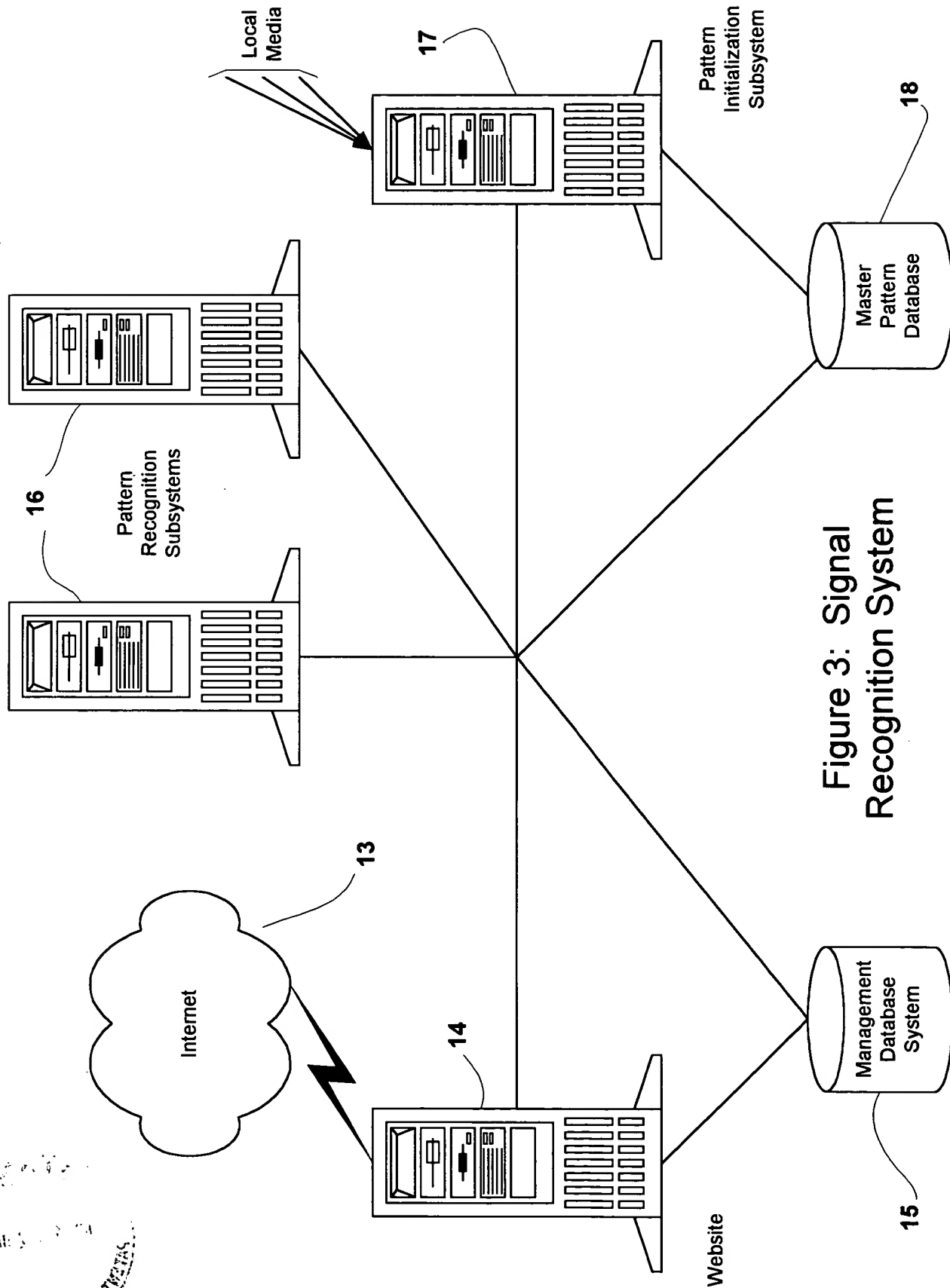


Figure 3: Signal Recognition System

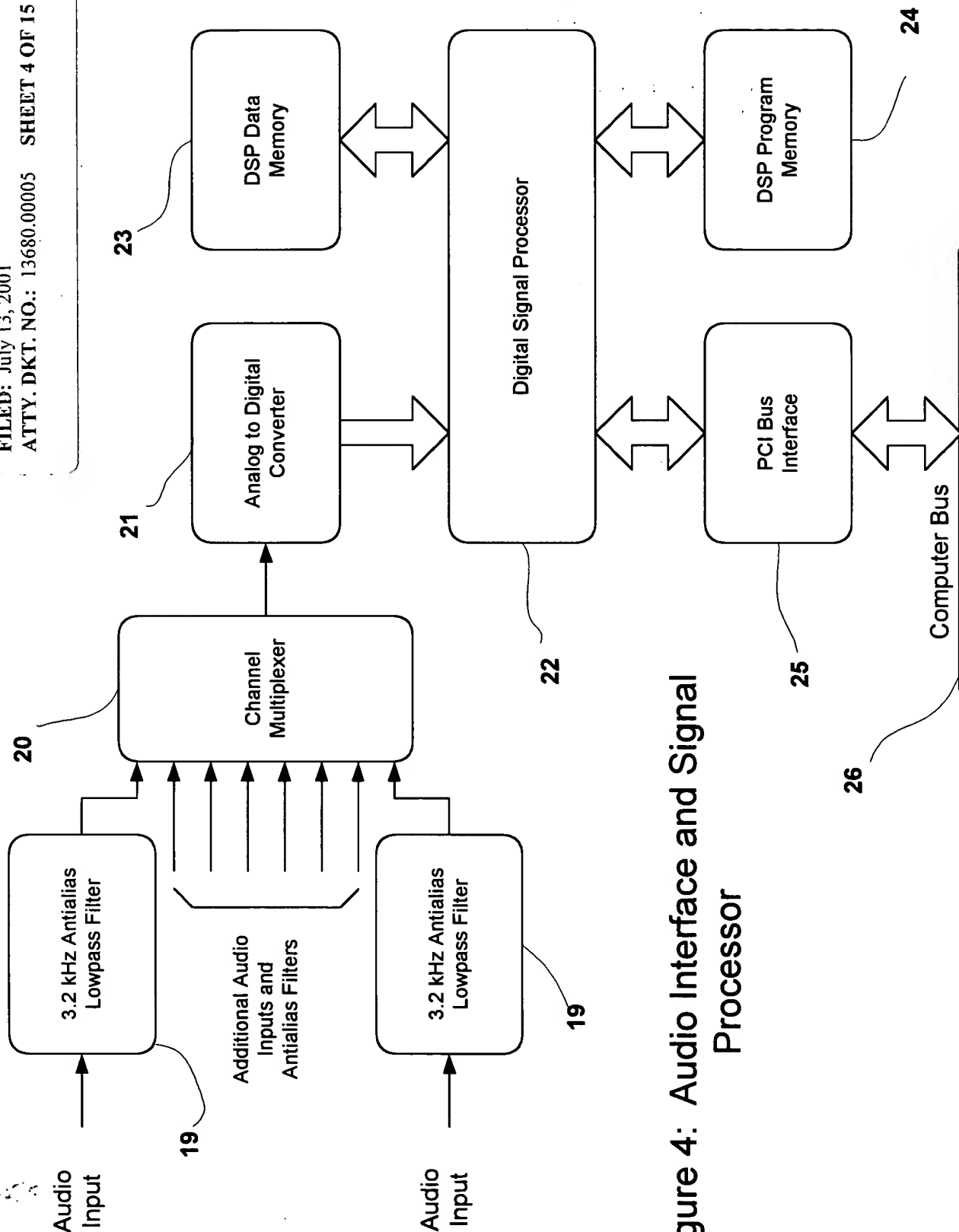


Figure 4: Audio Interface and Signal Processor

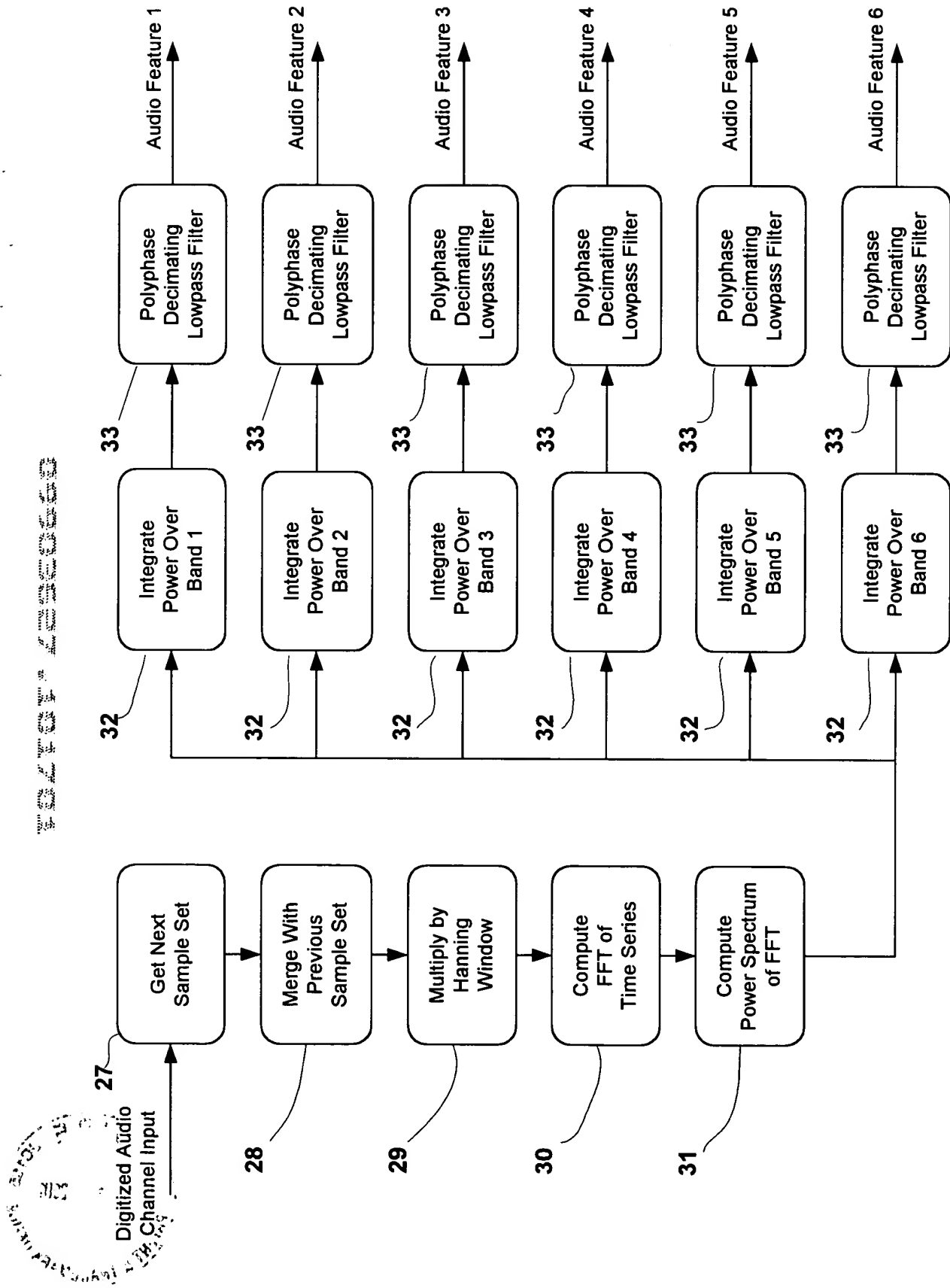
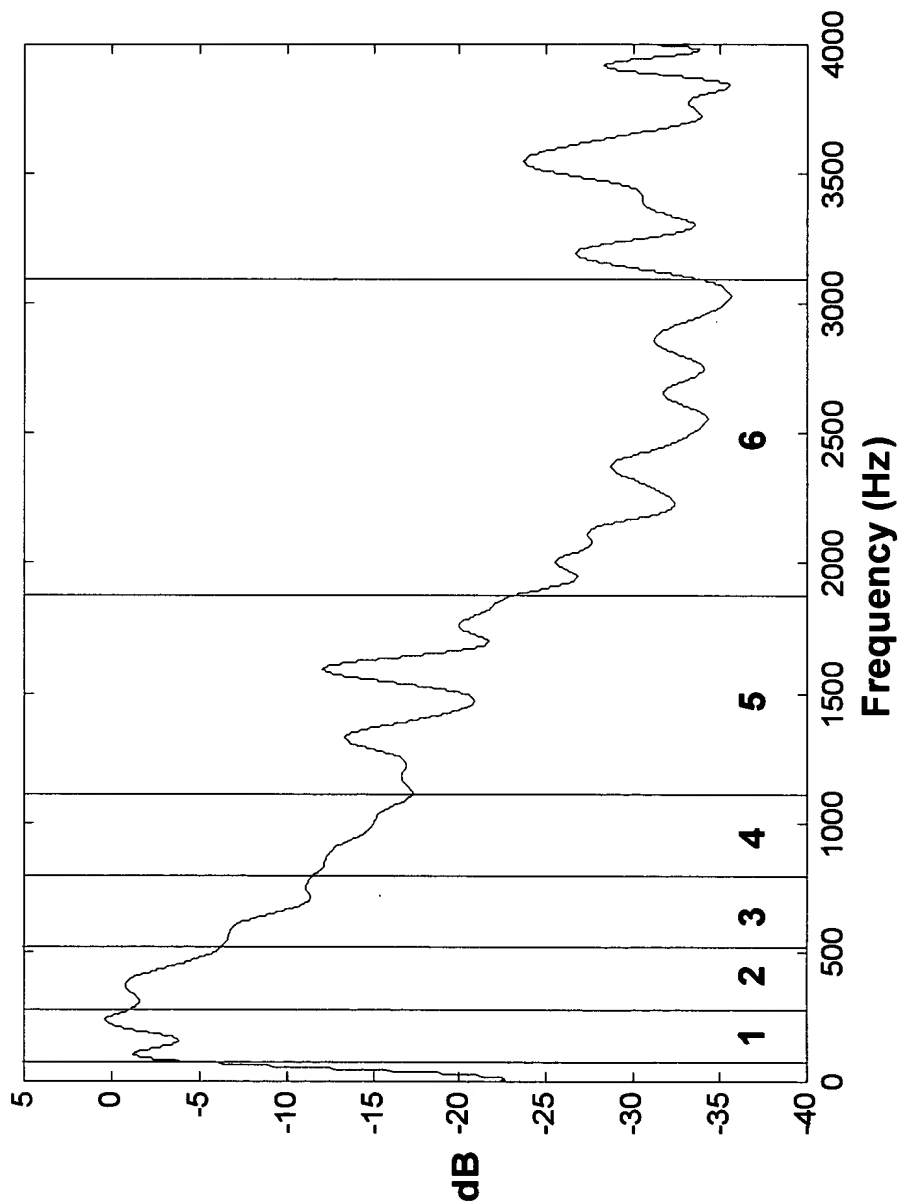


Figure 5: Audio Spectrum Analysis and Feature Extraction

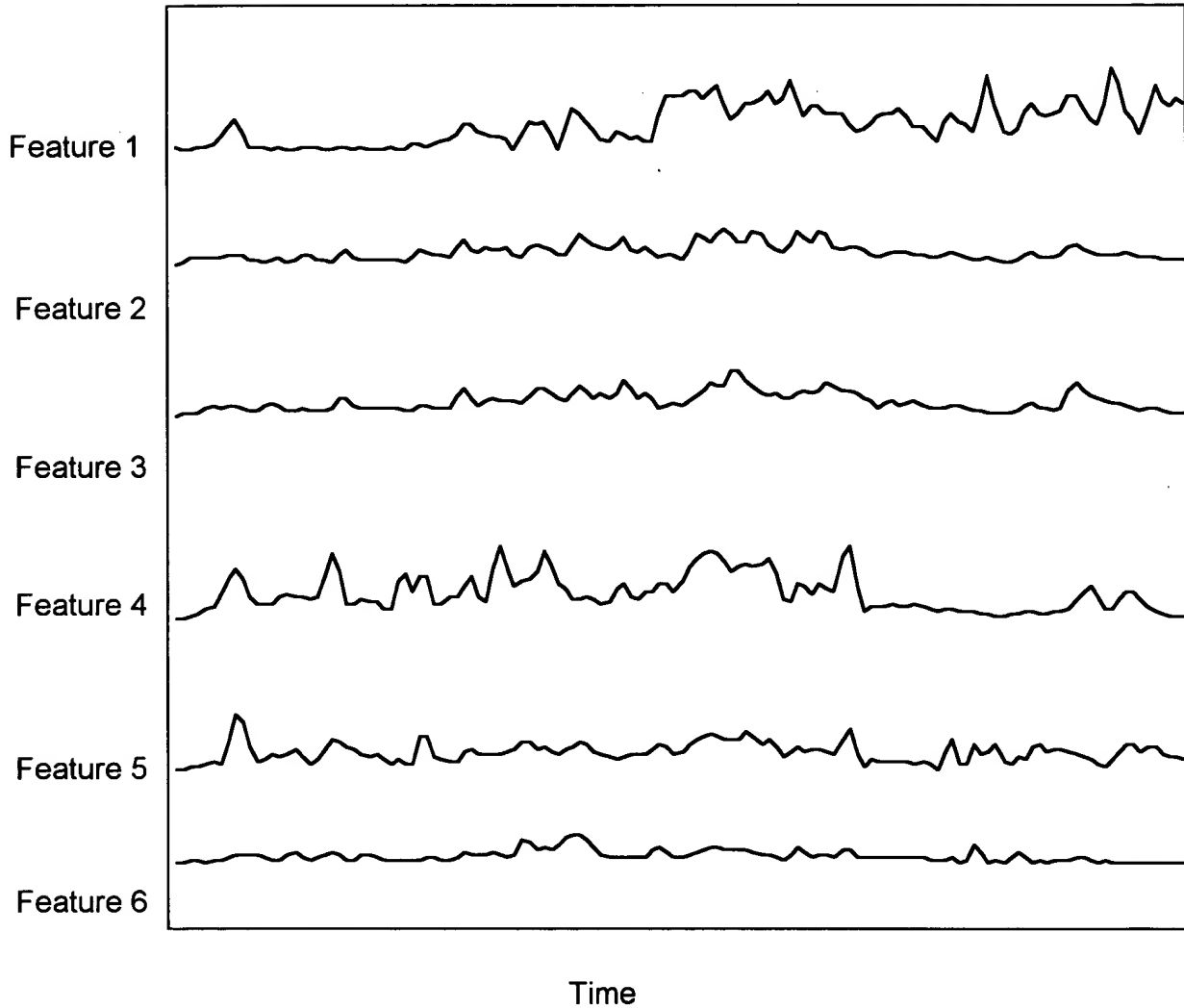
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**APPLICATION NO.:** 09/903,627  
**TITLE:** AUDIO IDENTIFICATION SYSTEM AND METHOD

**FILED:** July 13, 2001

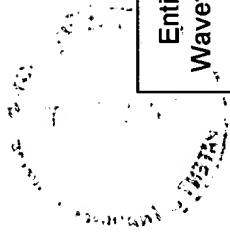
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**Figure 6: Audio Spectrum Analysis Bands**



**Figure 7: Example Feature Waveforms**



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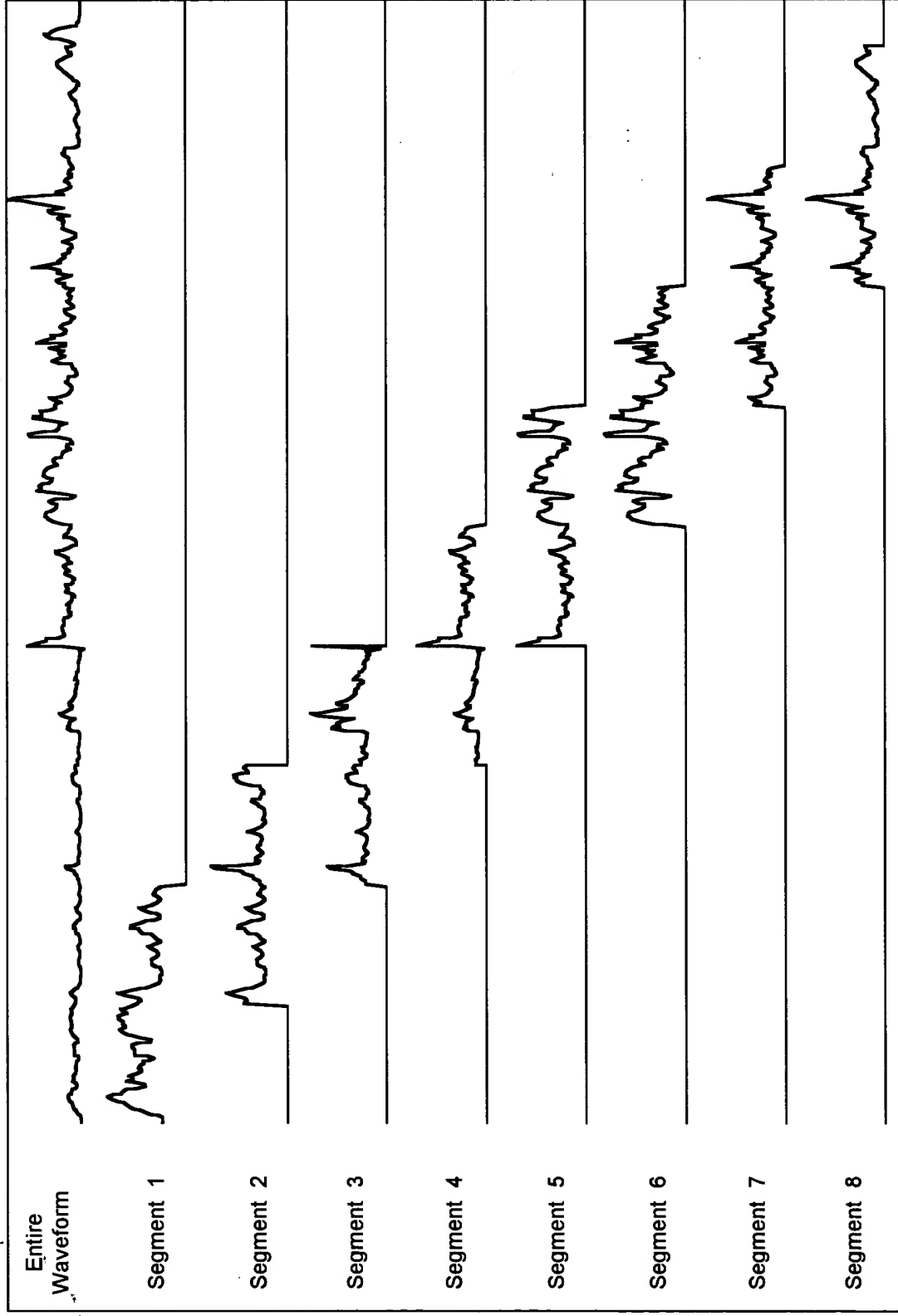


Figure 8: Reference Feature Waveform Segmentation



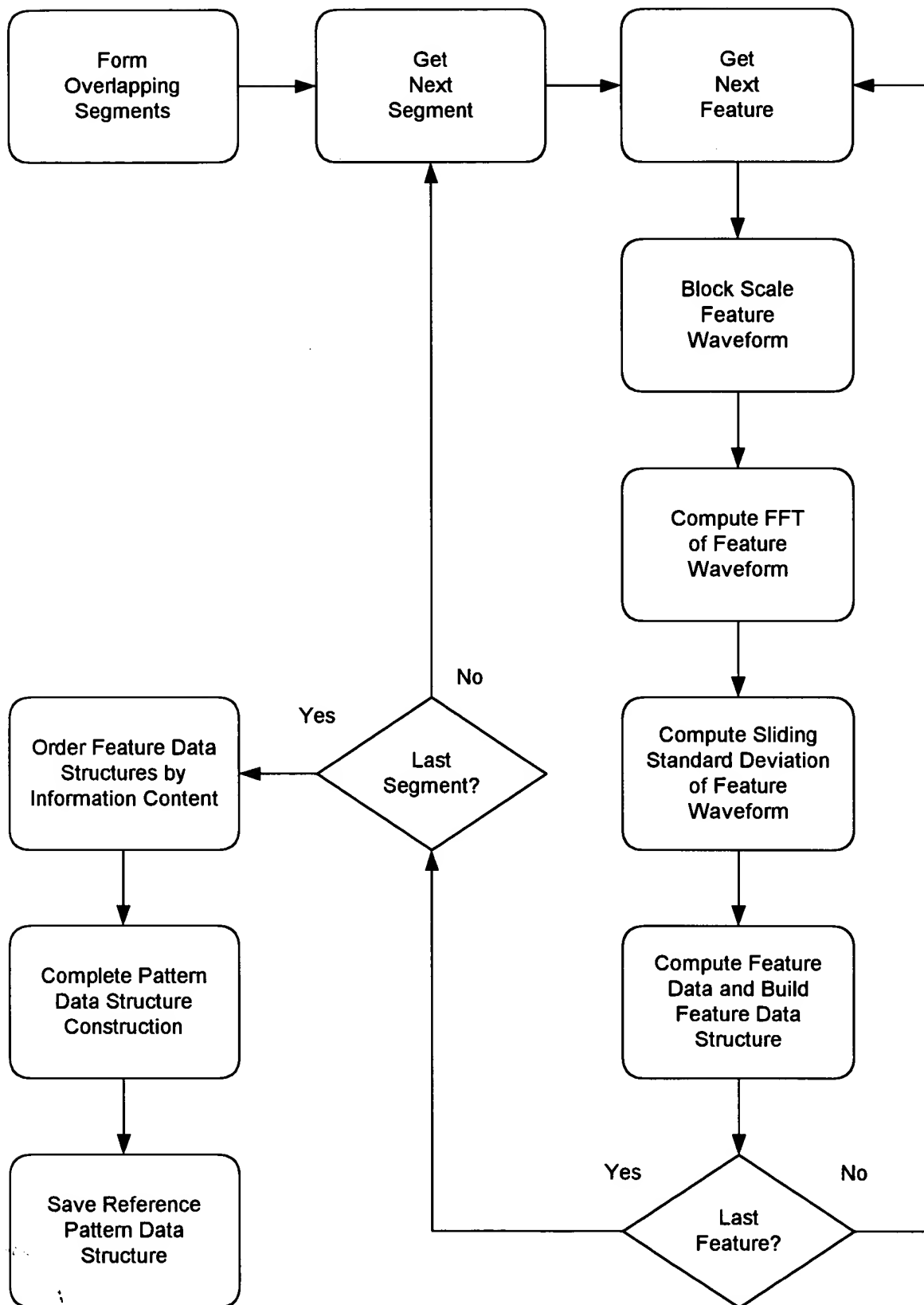


Figure 9: Reference Pattern Initialization

FIG. 10 is a block diagram of a reference pattern database structure.

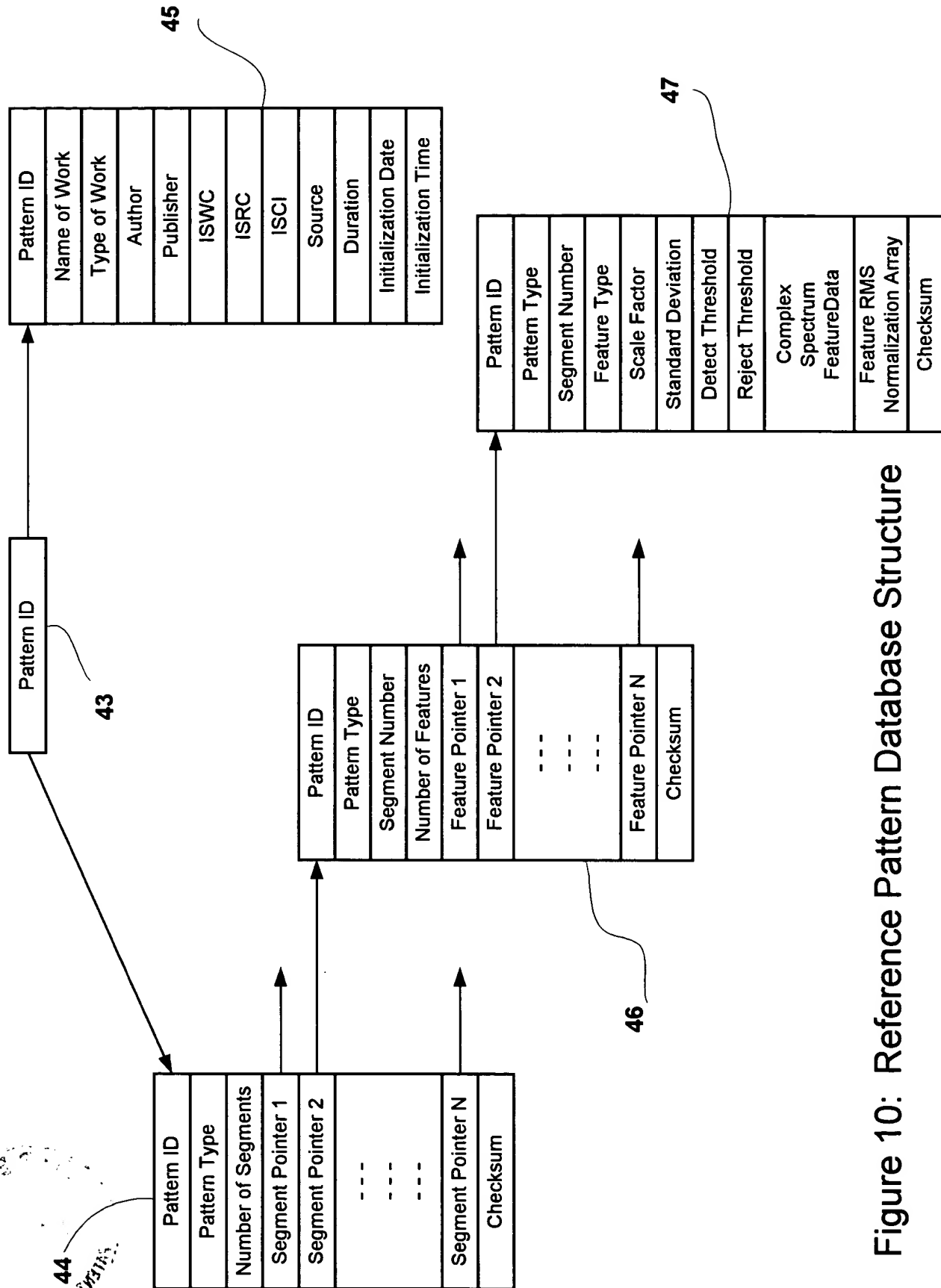


Figure 10: Reference Pattern Database Structure

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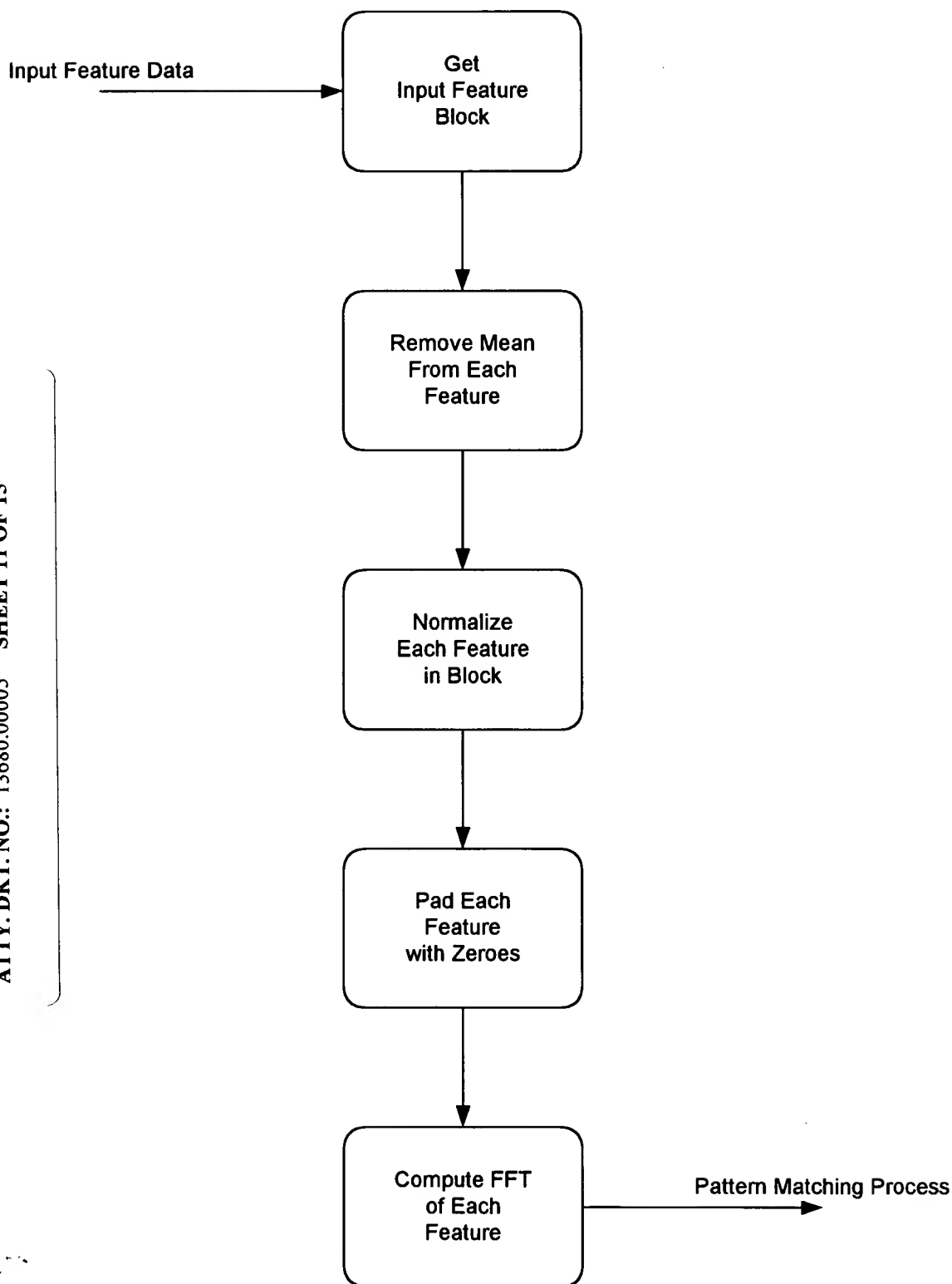


Figure 11: Real-Time Feature Block Pre-Processing

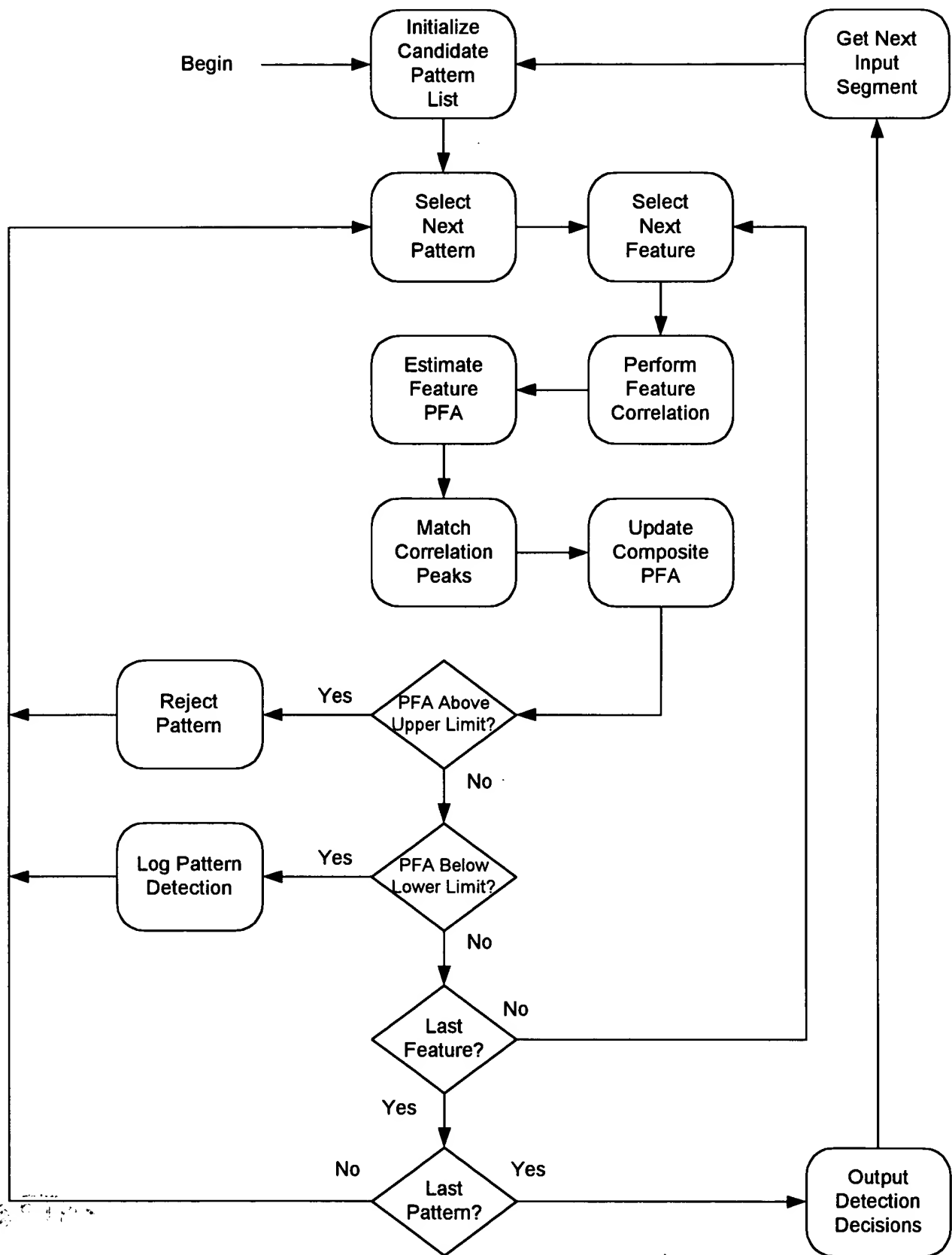


Figure 12: Multiple Feature Correlation Process

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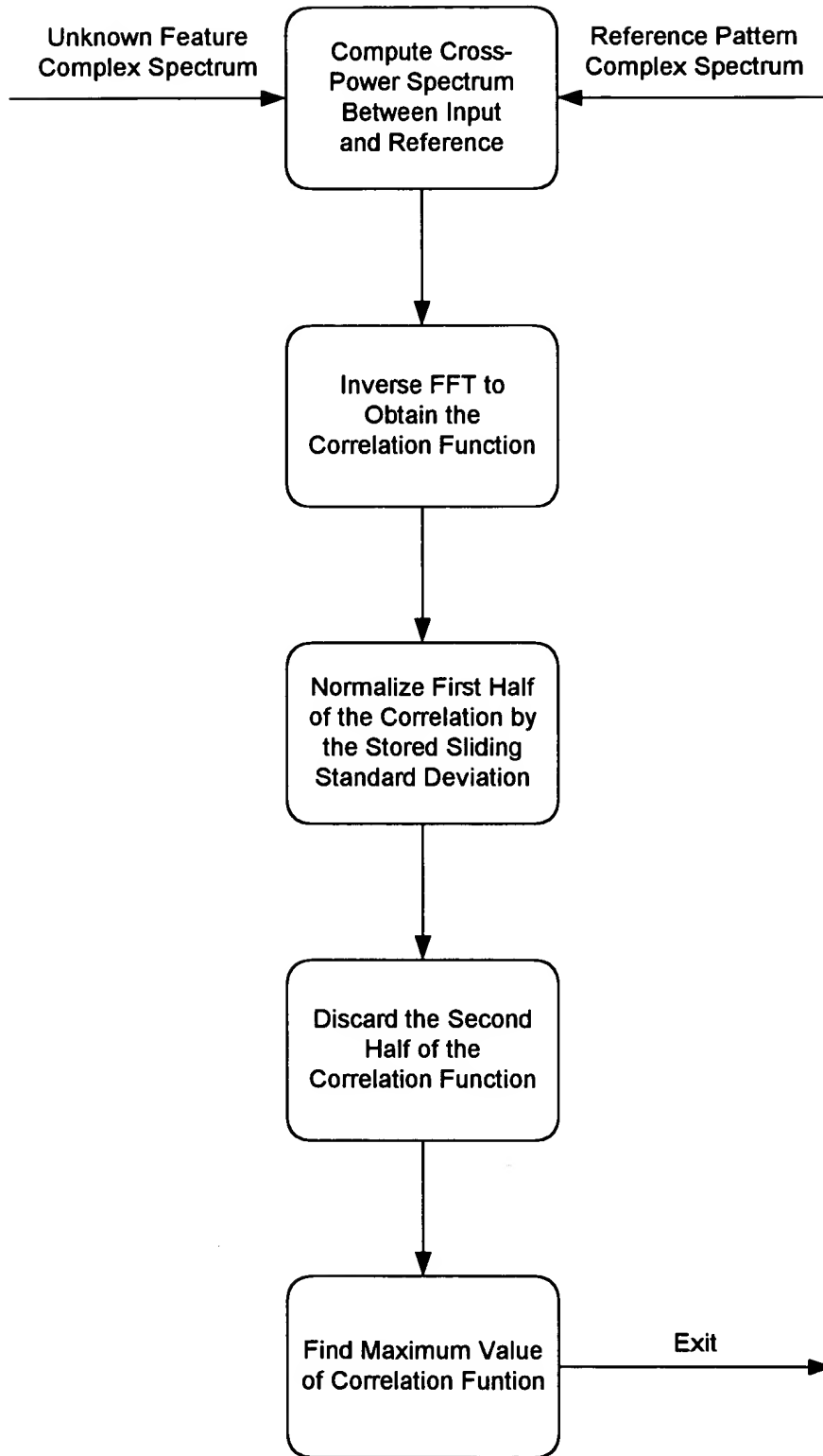


Figure 13: Feature Correlation Process

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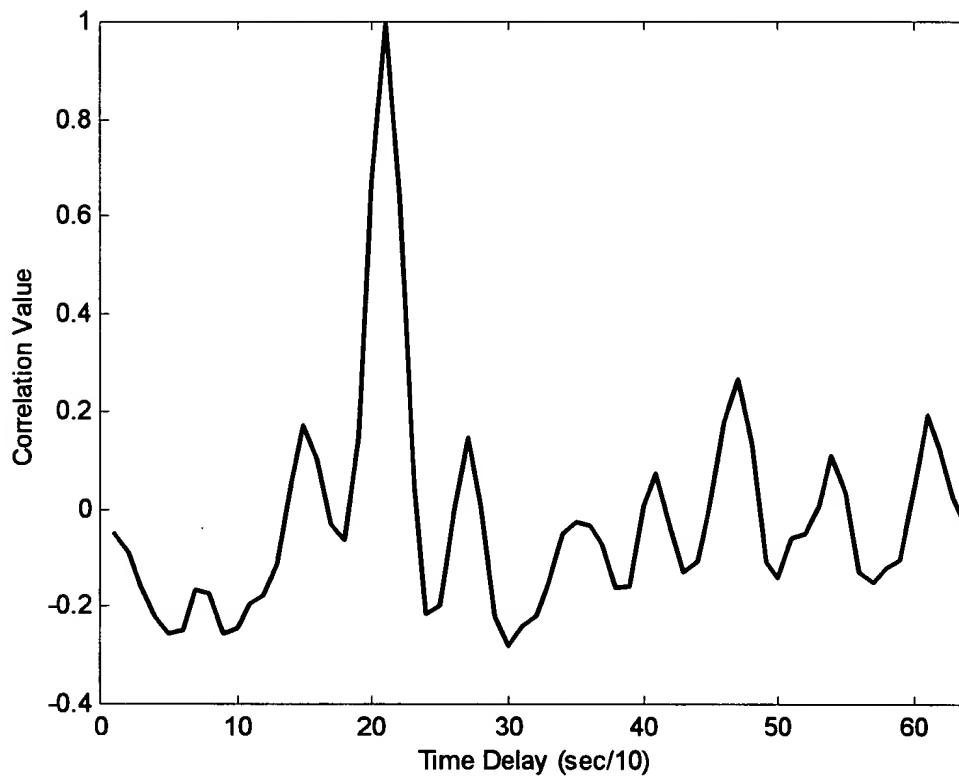
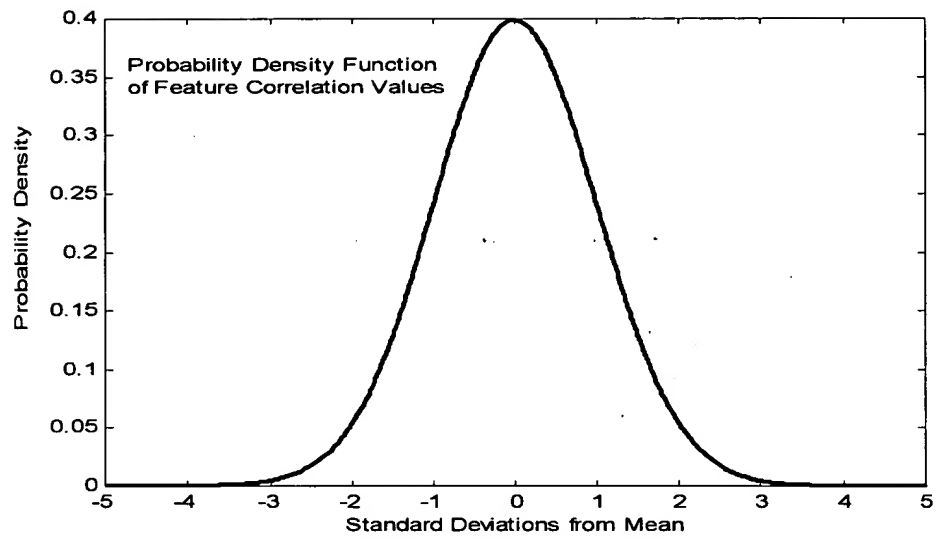
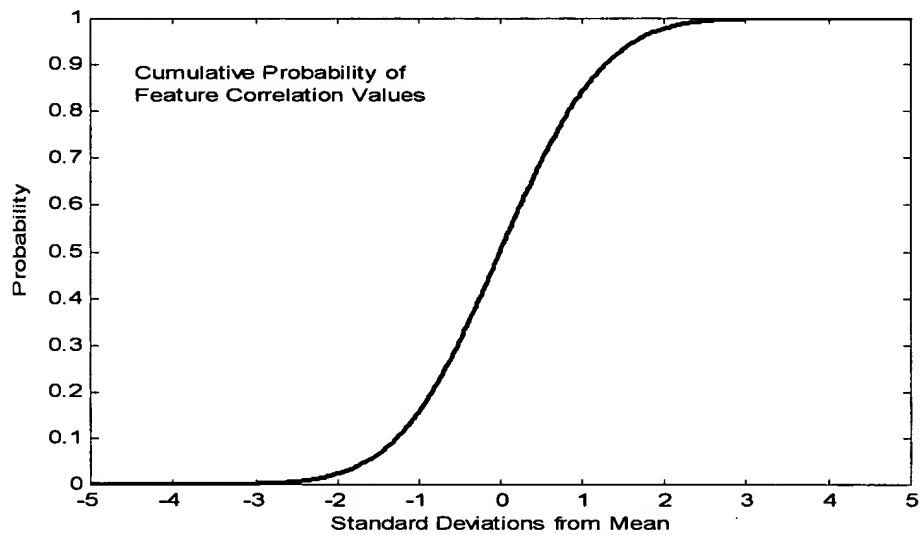


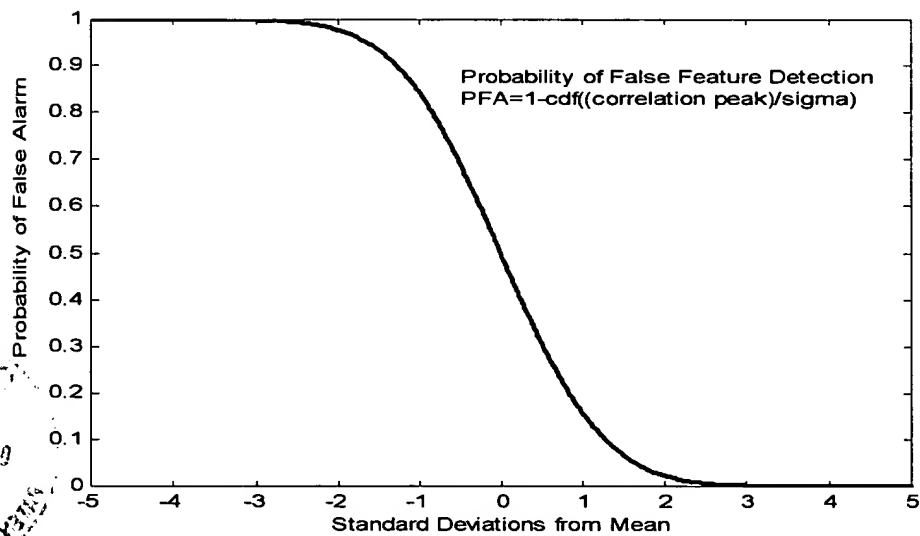
Figure 14: Example Feature Correlation Function



(A)



(B)



(C)

Figure 15: False Detection Estimation from Correlation Values